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January 10, 2022

Physics 1372
Electromagnetic Theory

- **Where:** 105 Allen Hall or **(**WEB (Zoom))
- **When:** Monday, Wednesday, and Friday: 10:00-10:50 am
- **Textbook:** "Introduction to Electrodynamics ", (3rd or 4th Edition), D. J. Griffiths
- **Homework:** Several problems assigned every week. The homework will be due approximately one week after problems become open. Late homework will be docked 10% per day.
- **Mid Terms:** There will be two 1.25 hour long mid-terms given during the semester.
- **Final:** The final is cumulative.
- **Grade Breakdown:**

→ 2 Mid Term Exams = 50% (25% each)

→ Weekly Homework = 20% (https://www.gradescope.com/courses/342685),
Entry Code: **ZRXDRP**

→ Cumulative Final Exam = 30%

- **Office Hours:** Monday and Wednesday 1:30-2:30pm (or by schedule) via Zoom
- **Website:** Standard CANVAS site (2224 PHYS 1372 SEC1050)**:** At this site you'll find all class materials – homework assignment link, exam dates, topic for lecture period, and anything else I think may be useful.

Course Description:

Physics 1372 is an intermediate course on electromagnetic theory, with a special emphasis on classical electromagnetic radiation, including the propagation of electromagnetic waves and the generation of electromagnetic waves. In this course we first conduct a review of electro-statics and magneto-statics at a higher level of mathematical sophistication than in lower-level courses, then move on to electrodynamics. We introduce and work with a number of special functions that are important in all branches of physics, such as Bessel functions and spherical harmonics, and work extensively with vector calculus, particularly in curvilinear coordinates. Time permitting, we discuss the relationship between Maxwell's equations and special relativity and the relativistically covariant formulations of electrodynamics. The course is ideal preparation for a graduate level course in classical electrodynamics.

Topics Covered:

• Chapter 7: Electrodynamics
• Chapter 8: Conservation Laws
• Chapter 9: Electromagnetic Waves
• Chapter 10: Potentials and Fields
• Chapter 11: Radiation
• Chapter 12: Electrodynamics and Relativity

Approximate Class Schedule
(The midterm dates are FIXED):

WEEK	TOPIC
January 10	Chapter 7
January 19 (no class Monday (1-17))	Chapter 7
January 24	Chapter 8
January 31 (Feb. 2,4)	Chapter 8-9
February 7	Chapter 9
February 14	***1st Exam*** (Friday, Feb. 18) Chapter 9
February 21	Chapter 9-10
February 28 (Mar. 2,4)	Chapter 10
March 7 (No classes, Spring break)	Sleep
March 14	Chapter 10-11
March 21	Chapter 11
March 28 (Apr. 1)	***2nd Exam*** (Apr. 1) Chapter 11
April 4	Chapter 12
April 11	Chapter 12
April 18	Chapter 12 + Review
April 25	Finals Week (Specific Day/Time TBA)

Course Policies:

• Academic Integrity:

Students in this course will be expected to comply with University of Pittsburgh's Policy on Academic Integrity. Any student suspected of violating this obligation for any reason during the semester will be required to participate in the procedural process, initiated at the instructor level, as outlined in the University Guidelines on Academic Integrity. This may include, but is not limited to, the confiscation of the examination of any individual suspected of violating University Policy. Furthermore, no student may bring any unauthorized materials to an exam, including dictionaries and programmable calculators.

Honor Code:
Students are expected to uphold the University's standard of conduct relating to academic honesty. Students assume full responsibility for the content and integrity of the academic work they submit. Students shall be guilty of violating the honor code if they:
1. Represent the work of others as their own
2. Use or obtain unauthorized assistance in any academic work
3. Give unauthorized assistance to other students
4. Modify, without instructor approval, an examination, paper, record, or report for the purpose of obtaining additional credit
5. Misrepresent the content of submitted work

Any student violating the honor code is subject to receive a failing grade for the course and will be reported to the Vice President of Academic Affairs.

• Disabilities:

If you have a disability that requires special testing accommodations or other classroom modifications, you need to notify both the instructor and Disability Resources and Services no later than the second week of the term. You may be asked to provide documentation of your disability to determine the appropriateness of accommodations. To notify Disability Resources and Services, call (412) 648-7890 to schedule an appointment. The Disability Resources and Services office is located at 140 William Pitt Union, and is open Monday-Friday from 8:30AM to 5:00PM.